# Two Decades of the California Tobacco Control Program: California Tobacco Survey, 1990-2008

California Tobacco Control Program

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# Introduction

The California Tobacco Control Program (CTCP), funded by Proposition (Prop) 99 (Tobacco Tax and Health Protection Act 1988), was established as the first state-level comprehensive tobacco control program in the nation. The mission of the program is to improve the health of all Californians by reducing illness and premature death attributable to the use of tobacco products. CTCP utilizes media campaigns, school and community education on smoking, cessation programs, and policy changes to discourage tobacco use and exposure to second-hand smoke, which reflect the guidelines for effective components of comprehensive programs. The multifaceted approach of the CTCP is an effective response to the multi-layered approach by the tobacco industry in the promotion and sales of cigarettes. Any single component of a tobacco control intervention is unlikely to have the same long-term influence on decreasing smoking prevalence as the combination of all the components. Study of tobacco use at the population level is critical to assess the state of tobacco control progress, and to shed light on the effectiveness of the strategies currently employed by CTCP.

Since the inception of the program, CTCP has conducted the California Tobacco Survey (CTS) as one of the main components of its evaluation to maintain accountability and improve the service of CTCP. The CTS has been conducted approximately every three years (1990, 1992, 1993, 1996, 1999, 2002, 2005, and 2008). The objective of these surveys was to collect representative statewide data on tobacco-related behaviors, knowledge of and attitudes towards smoking and monitoring the effect of State-initiated programs on individual target populations. The 2008 CTS was the eighth in a series of cross-sectional studies to collect information about tobacco use and behaviors among California adults. This report summarizes the major findings from the 2008 CTS and includes the trend data from previous surveys as well.

# Methods

The CTS is a random-digit-dialed (RDD) telephone survey of California residences to collect information regarding their tobacco use behavior and tobacco-related beliefs, attitudes and knowledge. To obtain a representative and efficient sample of California's population, 58 counties were grouped into 12 sampling regions. Seven of these regions correspond to the largest counties in the state. The remaining five regions are a geographic grouping of the other smaller counties.

The 2008 CTS employed a two-stage sampling procedure in which a sample of 22,225 households was screened to obtain demographic information, including the smoking status of all household members. At the second stage, extended interviews were attempted with a random sample of adults 30 years or older (sampling rate was based on the smoking status and race/ethnicity) and all young adults (18 to 29 years) residents of households screened in the first stage. 10,397 adults were interviewed in the 2008 CTS extended survey. The extended survey included detailed information on smoking history, cessation behavior, other tobacco use, attitudes, and beliefs related to smoking and secondhand smoke (SHS).

The complexity of the sample design required advanced methodologies to weight and standardize CTS data to enable accurate point estimates, variance estimation, and appropriate trend analysis. All estimates in the 2008 CTS report were standardized by the distribution of the population totals for the demographic subgroups: age, gender race/ethnicity, and education, obtained from the sums of the weights from the 2008 CTS screener survey. These reflect the population totals from the March 2008 Current Population Survey (CPS, 2008) and data from the US Census used in the post-stratification procedure for computing the screener survey weights.

Most of the items in the questionnaire have been used in multiple waves of the CTS, and are either identical or highly comparable to the measures in national tobacco surveys. To illustrate the progress made in California relative to the rest of the United States (U.S.), available national tobacco use surveys are also analyzed to enable direct comparisons between California trends and national trends in this report.

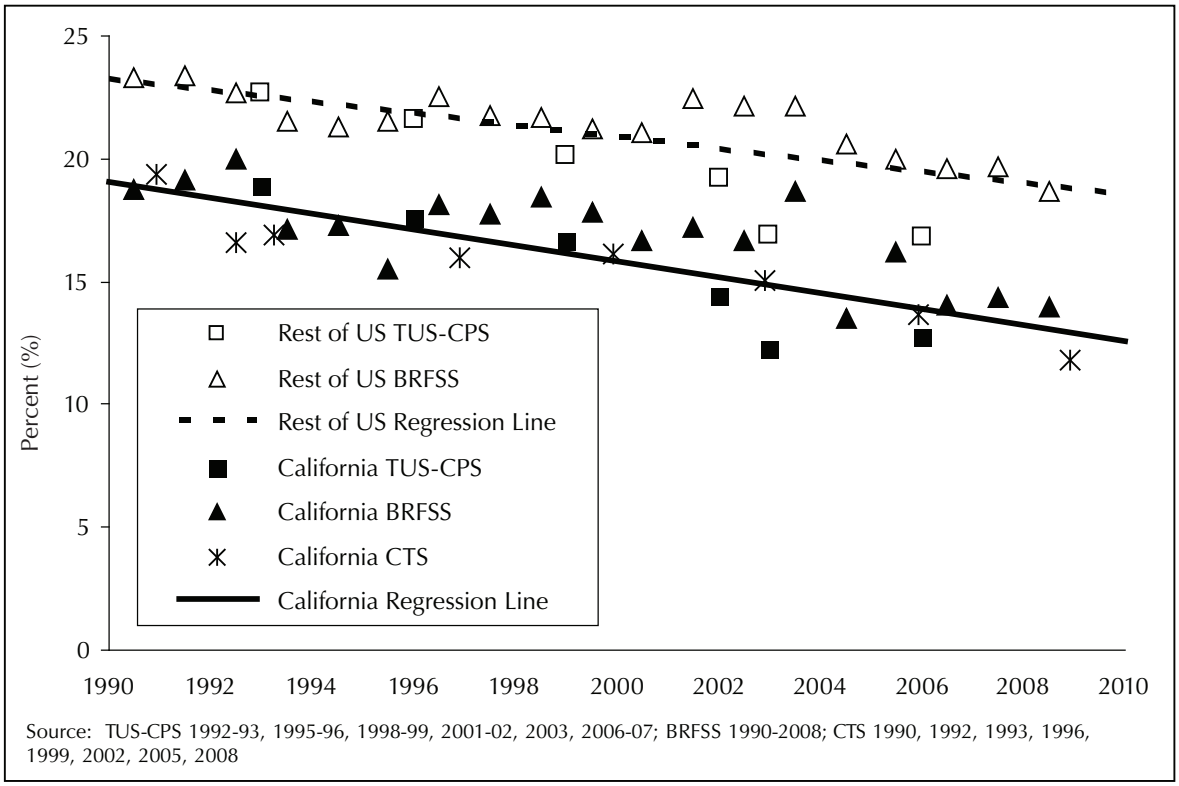
# Results

## Trends in Tobacco Use in California

California continues to do better than the rest of the U.S. in tobacco control. Per capita, the number of cigarette packs sold per month in California is 3.37 in 2008, down nine percent from the 3.72 packs per month observed in 2005. The California population buys approximately half (52 percent) the number of cigarettes per person as the rest of the US (6.42 packs per month). However, the decline in consumption slowed down in recent years within California relative to the rest of the nation. This could be an artifact associated with different trends in tax evasion. In 2002, California was the first state to pass a law requiring a sophisticated electronic tax stamp on cigarette packs, making compliance with the tax easier to monitor.

According to a number of surveys in California, the reported smoking prevalence among adults in California continues to decline and is consistently lower than in the rest of the U.S. (Figure 1). Linear regression lines fitted to the pooled California survey data and the pooled survey data for the rest of the US for 1990 through 2008 are included in the figure. Based on the linear regression line fit to the California data, estimated smoking prevalence

**Figure 1: Reported Smoking Prevalence, Comparing US and California Surveys (Standardized to 2008 California Adult Population)**



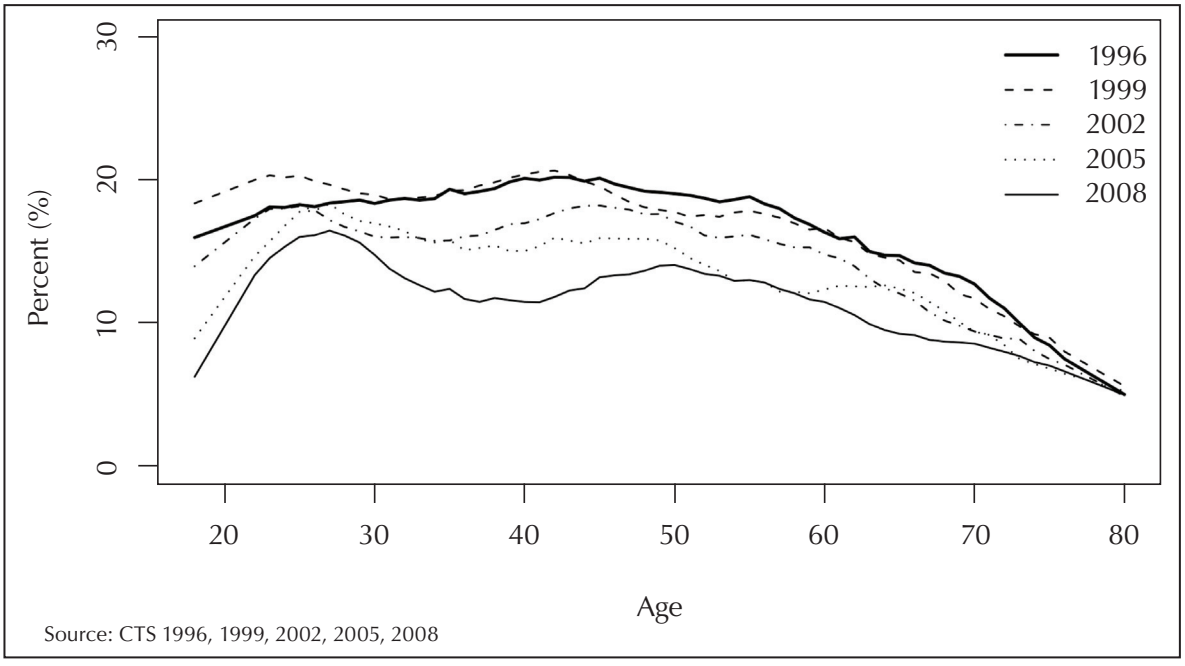

Source: TUS-CPS 1992-93, 1995-96, 1998-99, 2001-02, 2003, 2006-07; BRFSS 1990-2008; CTS 1990, 1992, 1993, 1996, 1999, 2002, 2005, 2008

in California declined on average by 0.33 points per year between 1990 and 2008 and reached 13.2 percent in 2008. Projecting the pooled sample regression for California, leads to an estimated smoking prevalence of 12.6 percent in 2010, close to the Healthy People 2010 recommended target of 12 percent smoking prevalence (USDHHS, 2000).

The reported adult smoking prevalence from the 2008 CTS is 11.6 ± 0.4 percent (where ± 0.4 is the margin of error at 95 percent confidence). This represents a 12.8 percent decline from the smoking prevalence in 2005 (13.3 ± 0.5 percent) and a 38 percent decline compared to 1990 (18.6 ± 0.4 percent). The large size of the CTS surveys allows us to provide age-specific smoke prevalence (Figure 2). With each succeeding survey from 1999 to 2008, prevalence dropped across all ages from 18 to the late 70s. The most marked difference over time is the dramatic decline in smoking prevalence among 18 year olds across surveys, from about 18 percent in 1999 to about one-third of that level (approximately 7 percent) in 2008. This decline reflects the success of the program in reducing early initiation of smoking, as has previously been noted (Pierce et al., 2005). However, it would appear that this success was achieved by postponing initiation (18-24 years) rather than preventing it entirely.

The decline in adult smoking prevalence was observed across all demographic groups. Women continue to consistently smoke less than men in California. In 2008, 14.9 ± 0.6 percent of men in California smoked compared to only 8.4 ± 0.4 percent of women. Between 1990 and 2008, there was a 43.9 percent decline for women compared to a 33.6 percent decline for men during the same period. Among ethnic groups, African Americans have the highest smoking

**Figure 2: Age-Specific Prevalence, California Tobacco Survey 1996-2008**

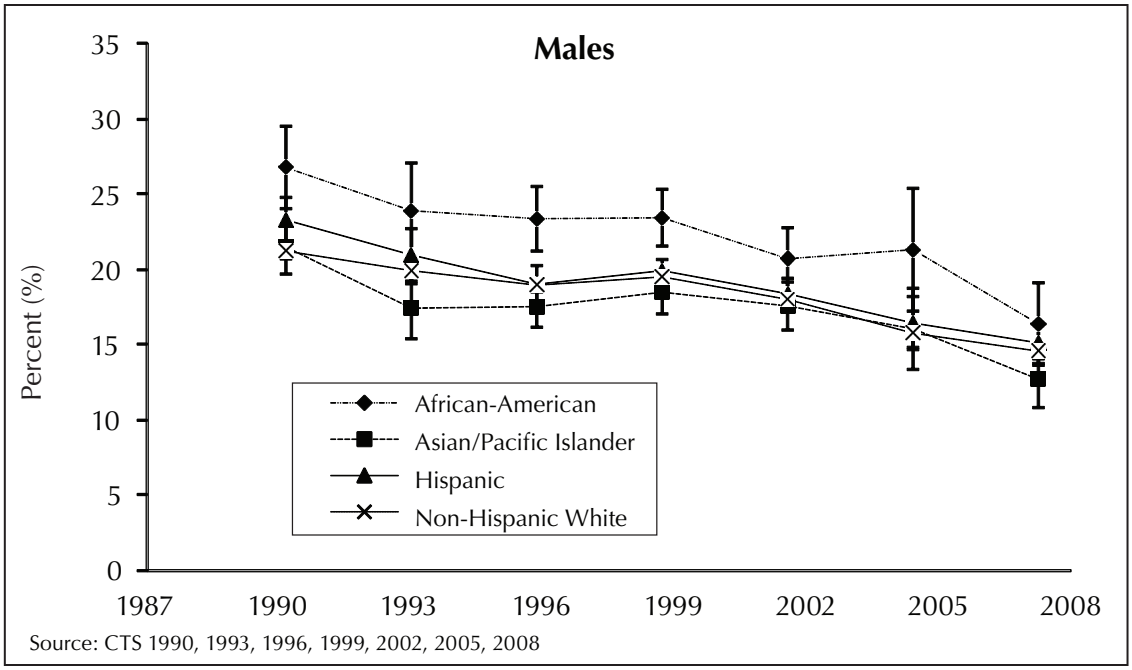



Source: CTS 1996, 1999, 2002, 2005, 2008

prevalence for both genders. Non-Hispanic Whites, Asians, and Hispanics were overlapping in their prevalence trends for men. For women, Asian and Hispanic prevalence rates were significantly lower than those of African Americans and Non-Hispanic Whites (Figure 3 and 4). Since 2005, adult smoking prevalence also declined across all age groups, but the 18-24 and 25-44 year age group prevalence rates declined at approximately double the rate of those in the older age groups of 45-64 and 65 years or above. This is especially evident for women in the youngest (18-24 years) age group (Table 1).

Smoking is correlated with education level (CDC 2009, Substance Abuse and Mental Health Services Administration 2005), as has been consistently shown by CTS surveys. Smoking prevalence declined for college graduates to a prevalence of 5.9 ± 0.4 percent in 2008 while prevalence ranged from 12 to15 percent among those with less than a college education. Men who did not graduate from high school had the highest prevalence of smoking (20.9 ± 2.0 percent). However, women with less than 12 years of education had a lower smoking prevalence (8.7 ± 1.3 percent) compared to those with a high

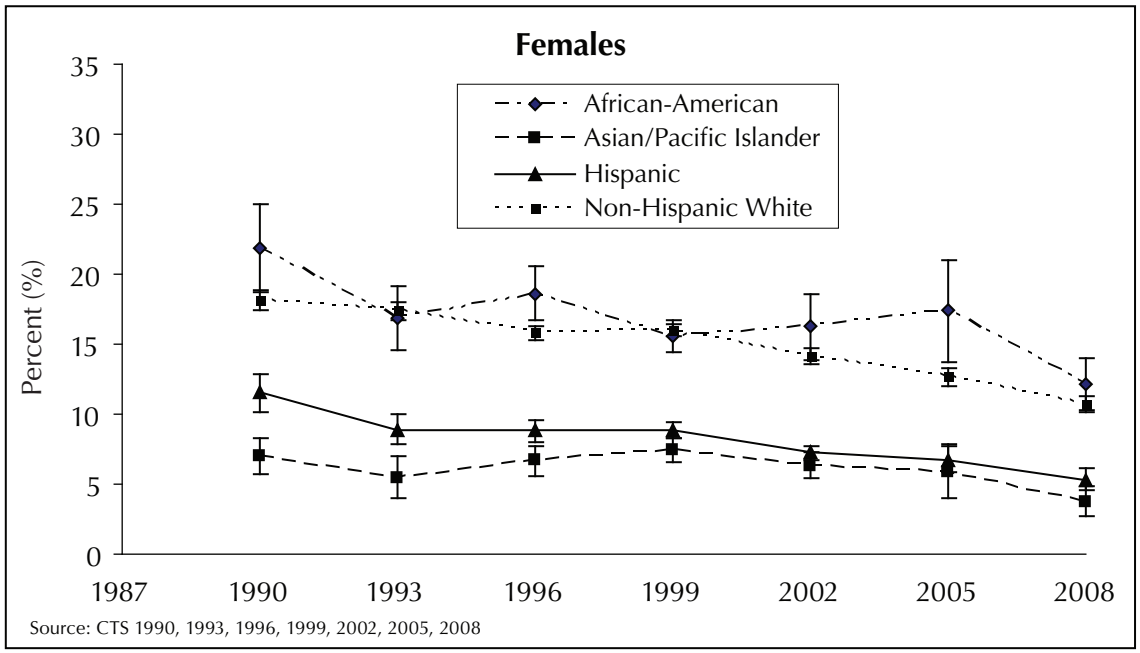
**Figure 3: Standardized (2008) Smoking Prevalence by Ethnicity and Gender (Males), 1990-2008**




Source: CTS 1990, 1993, 1996, 1999, 2002, 2005, 2008

| | 1990 | 1993 | 1996 | 1999 | 2002 | 2005 | 2008 |
|---|---|---|---|---|---|---|---|
| **African-American** | 26.4 | 23.6 | 23.1 | 23.2 | 20.5 | 21.1 | 16.3 |
| **Asian/Pacific Islander** | 21.3 | 17.4 | 17.5 | 18.4 | 17.5 | 16.0 | 12.8 |
| **Hispanic** | 23.0 | 20.8 | 18.9 | 19.8 | 18.3 | 16.4 | 15.1 |
| **Non-Hispanic White** | 21.0 | 19.8 | 18.8 | 19.4 | 17.9 | 15.8 | 14.6 |

**Figure 4: Standardized (2008) Smoking Prevalence by Ethnicity and Gender (Females), 1990-2008**




| | 1990 | 1993 | 1996 | 1999 | 2002 | 2005 | 2008 |
|---|---|---|---|---|---|---|---|
| **African-American** | 21.8 | 16.8 | 18.6 | 15.6 | 16.2 | 17.4 | 12.1 |
| **Asian/Pacific Islander** | 7.0 | 5.5 | 6.7 | 7.4 | 6.3 | 5.9 | 3.8 |
| **Hispanic** | 11.5 | 8.9 | 8.8 | 8.9 | 7.2 | 6.8 | 5.3 |
| **Non-Hispanic White** | 18.1 | 17.4 | 15.8 | 16.0 | 14.1 | 12.7 | 10.8 |

school diploma (10.8 ± 0.9 percent) or some college education (10.4 ±1.0 percent).

Education and income are closely associated, and it is therefore expected that those with higher incomes will have lower rates of smoking. Lower rates of smoking are seen in all households that report incomes over $75,000, with the lowest rate in households with incomes of $150,000 or more (7.8 ± 1.5 percent), about 60 percent lower than in households with income lower than $20,000 (19.8 ± 2.0 percent).

The 2008 CTS was a random sample of 12 geographically defined sampling regions. Since 1990, adult smoking prevalence has consistently declined across all regions of California. The decline has been less dramatic within the regions of the predominantly rural counties of northern and western California which had the highest prevalence (16.0 percent) among all the CTS regions.

Counties containing the largest California cities tend to have lower adult smoking prevalence rates. This was true for Los Angeles County (10.5 ± 0.8 percent), San Diego County (11.0 ±1.4 percent), and Alameda County (9.9 ± 1.4 percent). Exceptions are San Francisco County (13.5 ±3.8 percent)

and Sacramento County (14.0 ± 2.8 percent), whose prevalence rates exceed the statewide adult prevalence rate of 11.6 percent. Conversely, predominantly rural counties tend to have high adult cigarette smoking rates. Nearly all the rural northern, western and south central counties in the state have higher smoking prevalence as shown in the map (Figure 5).

The general pattern of high prevalence within counties with low population density was confirmed by analysis of the United States Census Bureau Zip Code Tract Areas (ZCTAs™). The Census Bureau has tabulated land area and population size for each ZCTA™. Hence, ZCTAs™ allow a finer level resolution investigation of the relationship between population density and smoking prevalence than provided by region- or county-level data. All households in the 2008 CTS were asked to report their ZIP Code® of residence. The prevalence of cigarette smoking within ZCTAs™ with a population density of 100 or fewer persons per square mile was 15.9 percent compared to a prevalence of 10.9 percent within ZCTAs™ with a population density of 2,000 or higher.

Although cigarettes remain the predominant form of tobacco use in the U. S., other tobacco products may be gaining a market share. In California, other tobacco product use is not decreasing in a similar manner to cigarette smoking. While adult current cigarette smoking has decreased 12.7 percent since 2005, current male cigar smoking has increased by 11.4 percent from 7.0 percent in 2005 to 7.8 percent in 2008 and current smokeless tobacco use remains stable and low in 2008 at 2.0 percent in males (negligible in females).

*Ever* hookah use increased between 2005 and 2008 by 41.8 percent for males and 47.4 percent for females. In 2008, 11.2±1.4 percent of males had ever smoked a hookah while only 2.8±0.7 percent of females ever smoked a hookah. Hookah use is increasing faster than any other tobacco product, especially in young adults. *Ever use* of hookah is now the most popular form of alternative tobacco use in females aged 18-24 years (10.0 ± 2.0 percent reported ever use of hookah). For young males within the same age group (18-24 years) 24.5 ± 3.1 percent reported ever using hookah.

## A Summary of Racial/Ethnic Differences in Tobacco Use

Patterns of tobacco use and its health consequences vary by racial/ethnic groups (USDHHS,1998; CDC, 2004c; CDC, 2008). This section will provide a summary of the smoking behaviors across race/ethnicity groups from the data of CTS surveys:

**African American**

- Between 1990 and 2008, there has been a significant decline of 41 percent in smoking prevalence among African American adults from 24.1± 2.4 percent in 1990 to 14.2 ± 1.6 percent in 2008. Furthermore, a substantial 26.0 percent decline in adult smoking prevalence among African Americans occurred between 2005 and 2008 (19.2 ± 2.6 percent to 14.2 ± 1.6 percent).
- Across CTS surveys, smoking prevalence among African Americans age 18-24 (7.8 ± 3.4 percent) has been lower than that for Non-Hispanic Whites in that age group (13.4 ± 1.7 percent). In contrast,

**Figure 5: Smoking Prevalence in California, 2008**


Data source: California Tobacco Survey, 2008

* Means that a regional prevalence is used

smoking prevalence for African Americans aged 45-64 (20.1 ± 3.2 percent) has been consistently higher than for Non-Hispanic Whites in the same age group (12.8 ± 0.7 percent).
- The overall percentage of all African Americans reporting a total home smoking ban increased significantly from 46.4 ± 7.0 percent in 1992 to 78.6 ± 2.6 percent in 2008.

**Asian/Pacific Islanders (Asian/PIs)**
- The overall adult smoking prevalence among Asian/PIs declined approximately 42 percent between 1990 and 2008 (from 13.9 ± 1.1 percent to 8.1 ± 1.1 percent).
- From 1990 to 2008, Asian/PI smoking prevalence declined by 39.9 percent for men, from 21.3 ±1.7 percent to 16.0 ± 2.6 percent and by 45.7 percent for women, from 7.0 ±1.3 percent to 3.8 ± 1.0 percent. Smoking prevalence in Asian/PI women remains less than one-third the smoking prevalence among their male counterparts (3.8 ± 1.0 percent versus 12.8 ± 1.8 percent).
- In California, the largest percentage of Asian/PIs initiated smoking between age 18-21 years (43.3 ± 6.4 percent) and almost one quarter (24.9 ± 6.7 percent) initiated between ages 22-25 years compared to approximately one-third (32.7 ± 2.8 percent) of Non-Hispanic Whites who initiated smoking between the ages of 18-21 years.

**Hispanics**
- Since 1990, overall adult smoking prevalence among Hispanics declined approximately 41 percent, from 17.2 ± 1.0 percent to 10.2 ± 0.7 percent in 2008, and women have consistently had a lower prevalence than men. In 2008, smoking prevalence among Hispanic women was approximately 1/3 the prevalence in their male counterparts (5.3 ± 0.8 percent and 15.1 ± 1.0 percent, respectively).
- Education level may be less related to smoking prevalence among Hispanics compared to Non-Hispanic Whites. In 2008, Hispanics with less than high school education had only a 2.4-fold higher prevalence than those with a college degree or more (12.0 ±1.2 percent vs. 5.0 ± 1.1 percent), compared to a 5-fold difference for Non-Hispanic Whites (31.1 percent vs. 6.2 percent).
- Since 2005, there has been a significant increase in the percentage of Hispanic smokers making a quit attempt, from 52.8 ± 9.1 percent in 2005 to 74.8 ± 5.0 percent in 2008.

## Smoking Cessation

This section will examine important factors associated with smoking cessation in California, including quit attempts, quit intension, use of cessation aids, cigarette consumption levels and home smoking restrictions.

One indicator of the effect of cessation interventions is the percentage of smokers who are making quit attempts (Zhu 2006), which has been monitored over time in the CTS. The overall percentage of smokers in the last year who made a quit attempt in the 12 months prior to the survey increased from 56.0 ± 3.5 percent in 2005 to 60.2±2.8 percent in 2008. Although this increase between the 2005 and 2008 surveys is not statistically significant, the percentage of smokers who made

a quit attempt in 2008 is rebounding back in the right direction and is at the level it was in 1999 (60.2 ± 1.5 percent). In addition, there has been a significant increase between 1996 and 2008, from 53.7 ± 1.2 percent to 60.2 ± 2.8 percent.

A slightly higher percentage of male smokers made a quit attempt compared to female smokers (62.8 ± 3.7 percent of men vs. 55.6 ± 3.6 percent of women). There was a significant difference by age group: the percentage of smokers making a quit attempt decreased with increasing age group. While 76.1 ± 5.7 percent of young adults aged 18-24 years reported a quit attempt, only 44.5 ± 4.8 percent of adults aged 65+ years reported a quit attempt. In 2008, the percentage of Non-Hispanic White smokers (54.0 ± 3.3 percent) making a quit attempt was significantly lower than that for African Americans (71.8 ± 5.9 percent) and for Hispanics (67.7 ± 6.2 percent). In summary, smokers who were less likely to make quit attempts were women, older age groups, and Non-Hispanic Whites.

Predictors of quit attempts include a smoker's motivation or readiness to quit. In the CTS, the quitting intention of all current smokers in the next month and the next six months has been surveyed since 1996. Overall, the percentage of smokers intending to quit has been relatively stable over time.

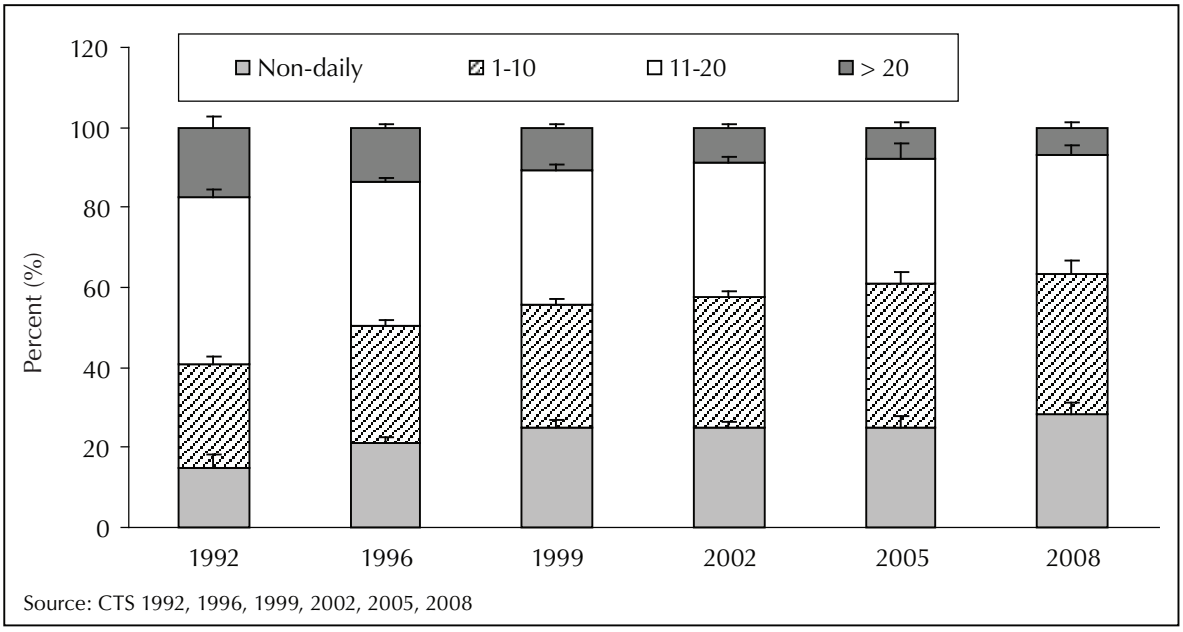
In 1996, 11.8 ± 1.0 percent of smokers reported they will quit in the next month and 30.1 percent reported they will quit in the next six months, while in 2008, 13.2 ± 1.7 percent of smokers reported they will quit in the next month and 32 percent reported they will quit in the next six months.

In recent surveys (2002-2008), the overall percentage of smokers using any formal assistance to quit has not increased but remained fairly stable at 25.9 ± 3.2 percent. The percentage of smokers who used nicotine replacement therapy (NRT) alone or in combination with other assistance has not changed significantly during that same time period.

For those not quitting, national data on California indicate that there has been a decrease in their cigarette consumption (Al-Delaimy et al., 2007). Over time, consumption patterns have shifted from daily smoking to non-daily smoking. The percentage of non-daily smokers among current smokers doubled between 1992 and 2008, from 14.8 ± 3.3 percent to 28.1 ± 3.2 percent of the smokers. There has also been a shift among daily smokers from moderate (11-20 cigarettes per day) and heavy (>20 cigarettes per day) daily smoking to light daily smoking (1-10 cigarettes per day) (Figure 6). Among daily smokers, the average number of cigarettes consumed per day has steadily decreased from 19.3 ± 0.4 cigarettes per day in 1992 to 14.5 ± 0.2 cigarettes per day in 2008.

Since 2005, participants in the CTS were asked if they lived in homes with home smoking restrictions ("home bans"). Analysis of the data found that home bans may be associated with decreases in consumption. In 2005, 35.2 ± 4.9 percent of current smokers who have ever had a home ban reported that they reduced consumption because of a ban. The percentage increased to 53.4 ± 3.8 percent in 2008, a 51.7 percent increase. Home bans may also be associated with time to first cigarette. In 2008, the percentage of smokers who reported they smoke within 30

**Figure 6: Prevalence of Different Consumption Levels Among Current Smokers, 1992-2008**




Source: CTS 1992, 1996, 1999, 2002, 2005, 2008

| Consumption | 1992 | 1996 | 1999 | 2002 | 2005 | 2008 |
|---|---|---|---|---|---|---|
| **Non-daily** | 14.8 | 21.2 | 25.2 | 25.0 | 25.1 | 28.1 |
| **1-10 cigs/day** | 25.9 | 29.4 | 30.6 | 32.4 | 35.7 | 35.4 |
| **11-20 cigs/day** | 41.8 | 35.6 | 33.3 | 34.0 | 31.5 | 29.8 |
| **> 20 cigs/day** | 17.6 | 13.8 | 11.0 | 8.6 | 7.7 | 6.8 |

minutes of waking was 49.1 ± 5.2 percent for those with a total home ban, much lower than for those with a partial ban (67.3 ± 6.1 percent) or no home ban (70.6 ± 5.1 percent).

## Price, Taxes, and Purchasing Behavior

Economists and other researchers have clearly demonstrated a relationship between the price of cigarettes and smoking behaviors, based on the price elasticity of demand (Chaloupka et al., 2002; Chaloupka & Warner, 2000) whereby price and product consumption are inversely related. In California, the pre-tax price of cigarettes according to national reports in 2008 ($3.42) was comparable to the inflation-adjusted price in 1999 ($3.41), suggesting a limited influence of price as a tobacco control measure unless the price is further increased. California recently earned a "D" grade on the American Lung Association's "State of Tobacco Control 2009" report card for the current $0.87 cigarette tax (American Lung Association, 2010). According to the report, California ranks 32nd in the nation for tobacco taxes and is one of four states that has not raised its tobacco tax in more than a decade. In 2008, more than three-quarters of adults (77.8 percent) supported an additional tax on cigarette packs and nearly half of them supported an increase of $1 or more per pack.

Over half of never smokers (54.1 percent) and nearly half of former smokers (49.5 percent) supported an increase of $1.00 or more per pack.

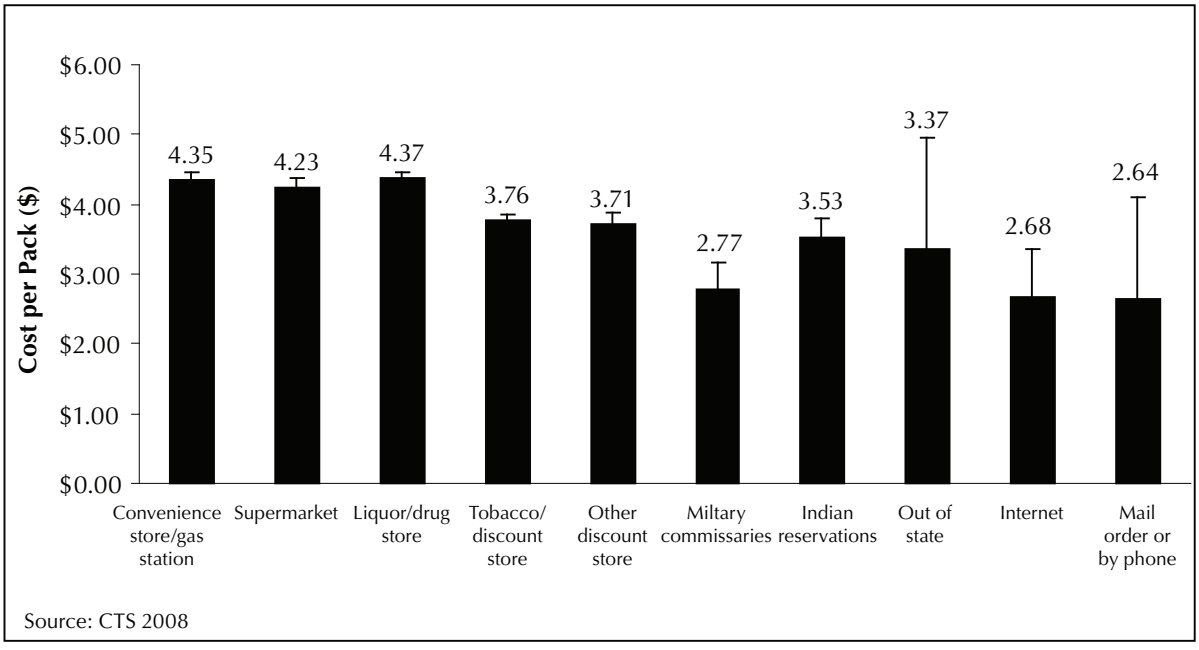
Purchasing behavior is another indicator of social norms, prices, and the effectiveness of tobacco industry advertisement and tobacco control efforts. Depending on the source of purchasing, smoker may pay different prices for tobacco products. As shown in Figure 7, the least expensive places to purchase cigarettes were mail/phone order, the Internet, and military commissaries. The most expensive places were supermarkets, convenience stores/gas stations, and liquor/drug stores. Convenience stores and gas stations remain the most important sales venue, with 50.1 ± 2.8 percent of smokers purchasing cigarettes in such stores, followed by liquor/drug stores (19.0 ± 1.8 percent) and tobacco discount stores (16.5 ± 2.0 percent).

## Protection of Nonsmokers from Secondhand Smoke

When it was established, CTCP made the protection of nonsmokers from secondhand smoke (SHS) a major goal of the program (Roeseler et al., 2010). This was a distinct feature of the program that separated it from tobacco control programs in other states. The social norm change among the California population was driven, among other aspects, by the focus on protection of nonsmokers. In this section, we characterize the consistent progress in protection of nonsmokers from SHS in California by assessing the trends in smoking bans and exposure to SHS at work, home, and public places.

In 2008, 95.2 ± 1.7 percent of smokers and 96.6 ± 1.3 percent of nonsmokers report working in a completely smoke-free

**Figure 7: Average Reported Price per Pack by Usual Place of Purchase in 2008**




Source: CTS 2008

workplace. However, 13.5 ± 2.3 percent of nonsmokers still reported exposure to SHS at their workplace. Between 1996 and 2008, there has been no appreciable change in reported exposure to SHS in the workplace; the percentage of workers who reported exposure ranged between 11.8 percent and 15.3 percent during this period. Those reporting work exposure to SHS were more likely to be males (17.2 ± 4.0 percent), young adults (25.5 ± 3.6 percent), Hispanics (19.2 ± 6.5 percent), and those with low education level (19.4 ± 16.3 percent).

The proportion of adults living in homes with total home bans is still gradually increasing: 80.8 ± 1.4 percent in 2008 in the general population and 59.3 percent among smokers (compared to 48.1 ± 1.9 percent and 19.4 ± 1.8 percent, respectively, in 1992). For those living with a child younger than 6 years old, 88.6 percent reported a total home ban when all household members were nonsmokers, and 76.7 percent reported a total home smoking ban when there was at least one smoker in the household.

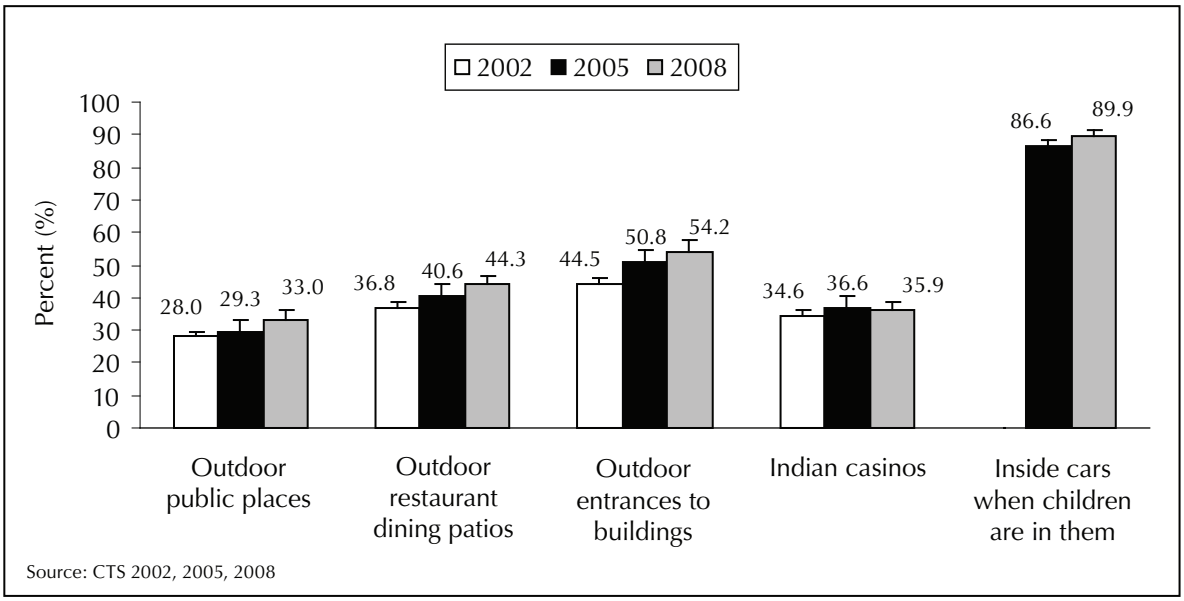
While California workers have enjoyed a decline in secondhand smoke exposure in the workplace and at home, there was increasing incidence of exposure from venues other than work or home. Most occurred in parks and public outdoor places (49.4 percent of adults reporting exposure), followed by restaurants (11.4 percent) and shopping malls (5.9 percent). Only 33.6 ± 2.4 percent of Californians are not exposed to SHS from any source (that is, not exposed at work, at other places, or in the home where a ban on smoking is in place and no smokers reside), a number which has not changed since 1999. Young adults 18-24 aged years are least protected from SHS exposure (19.9 ± 1.9 percent reporting no exposure), those aged 25-44 years (32.4 ± 4.5 percent), 45-64 years (33.5 ± 4.3 percent) and 65 or more years (41.7 ± 4.7 percent) were much more likely to report no SHS exposure.

There has been a continuous increase in the proportion of smokers who support banning smoking in outdoor restaurant dining areas (Figure 8). In 2008, 54.3 ± 3.3 percent of smokers supported banning smoking outside the entrance of buildings compared to only 44.5 ± 1.7 percent in 2002, and 44.3 ± 2.5 percent supported banning smoking in restaurant outdoor patios in 2008 compared to 36.8 ± 1.9 percent in 2002. A clear majority (66.5 percent) of Californians support banning smoking in casinos. Only 5.9 percent of the population who visited a casino in the last year stated they would be less likely to visit a casino if there were a ban on smoking, while 34 percent of the population said they would be more likely to visit a casino if there were a ban on smoking, and 60 percent said it made no difference to them.

## Media and Marketing Influences on Smoking

CTCP has a large scale media campaign. However, the CTCP media expenditure has remained stable since 2003, and at only $0.43 per capita in 2008, is one-third of the peak per capita expenditure of $1.33 in 2001/2002. As a result of the media expenditure decline, recall of the anti-smoking advertisements by the general public decreased between 2002

**Figure 8: Support among Smokers for Smoking Bans in Venues Where Smoking Usually Takes Place**




Source: CTS 2002, 2005, 2008

and 2008 across all age groups. For instance, in 2008, approximately 20 percent of young adults age 18-24 recalled seeing a lot of anti-tobacco advertisements on television in the past month compared to 37.9 percent in 2002.

Evidence suggests that mass media marketing can profoundly impact tobacco use, including smoking initiation, maintenance and cessation (Pierce 1998; Bauer et al., 2000; Farrelly et al., 2002; NCI 2008). The National Cancer Institute (NCI) Monograph on the effects of media on smoking (NCI 2008) concluded that there is "a causal relationship between tobacco advertising and promotion and increased tobacco use". Prior to the Master Settlement Agreement, 18-24 year old adults were twice as likely than older (41+ year olds) adults (60 percent vs. 32 percent) to report having a favorite tobacco industry advertisement – a known predictor of initiation. Since 1999, the proportion of 18-24 year olds with a favorite cigarette advertisement has halved, so that, by 2008, there was little age difference in this measure (31 percent for 18-24 year olds vs. 26 percent for 41+ year olds). Point of sale tobacco advertising appears more attractive to younger never smokers compared to older never smokers. Among 18-24 year old never smokers, 85 percent reported noticing point of sale advertising compared to 46 percent of never smokers over 45 years of age. Of never smokers who noticed in-store advertising, a strong majority thought Marlboro was the brand most advertised.

Among the advertisements created by CTCP, those targeting tobacco industry practices continued to be the most popular anti-smoking ads for young adults. While health consequences messages were popular at all ages, they were most popular with adults over 30 years of age.

A known predictor of initiation, willingness to use a tobacco industry promotional item,

decreased by 36 percent between 1999 and 2008 (from 18 percent to 12 percent) in 18-24 year-old young adults and decreased by a lower percentage for adults 25 years or older to approximately 10 percent in 2008. The proportion of young men (18-24 years) who reported attending an event sponsored by a tobacco company in the past year declined from 30 percent in 2002 to 20 percent in 2008, a 33 percent decline.

## Young Adults: Smoking Prevalence, Uptake, Cessation, and Attitudes

Young adulthood is a critical period for tobacco prevention and intervention efforts because young adults are in a transitional phase for smoking behaviors. Young adults are also an important group to monitor because trends in smoking may be an indicator of future population health status. In the mid to late 1990s, smoking prevalence among Californian young adults had been on the upswing despite declines in smoking among other age groups. Beginning in 2002, CTS started to oversample young adults (18-29 years of age) and added the questions to monitor and understand better of this population.

In 2008, the smoking prevalence among young adults declined to 13.4 ± 0.9 percent from the peak in 1999 of 18.8 percent. The decline in prevalence was most dramatic among women. In 2008, the prevalence of smoking among young adult women was 8.1 ± 1.0 percent, a 42.1 percent decrease since the peak in 1999. Among young adult men, the smoking prevalence was 18.1 ± 1.3 percent in 2008, a 21.0 percent decrease since 1999.

African American young adults had the lowest current established smoking rate among all racial/ethnic groups. In 2008, smoking prevalence among African American young adults was 9.5 ± 2.7 percent, which was 42.1 percent lower than prevalence among Non-Hispanic Whites. This is the first large decrease in prevalence in this group since 1993. There has been little change in prevalence for Asian/Pacific Islander and Hispanic young adults since 2005.

The youngest adult age group (18-20 years of age) continues to have lower smoking prevalence (8.3 ± 1.3 percent) than the older young adult age groups (prevalence of 12.8 percent among 21-23 year olds:, 18.8 percent among 24-26 year olds, and 16.5 percent among 27-29 year old). However, since 2005, there has been only a slight decline in smoking prevalence in this 18-20 year old age group compared to the major decline of 25 percent among 21-23 year old young adults

Recent national data suggest that young adults (18-24) have higher rates of quit attempts of at least one day than all other age groups (Messer et al, 2008). Data from the CTS replicate this finding among young adults in California. Among all adult cigarette smokers in 2008, young adults had a greater proportion of smokers (74.9 ± 3.6 percent) who reported quitting for one day in the past year compared to those aged 30-49 years (63.8 ± 5.7 percent) and 50-65 years (57.4 ± 3.8 percent). Young adults have consistently had the highest rate of quit attempts since 1996.

Overall, the large majority of young adults aged 21-29 years who sometimes or often go to bars or clubs are in favor of smoke-free bars. More than 90 percent of young adults would like to see the current smoke-free bar law kept as is, more strictly enforced, or extended to patios and outdoor sitting areas.

# Summary

California continues to show the benefits of a sustained tobacco control program. The California population buys approximately half (52 percent) the number of cigarettes per person as the rest of the U.S. Overall reported prevalence of smoking from multiple population-based data sets is consistently lower in California compared to the rest of the U.S. Prevalence declined 38 percent faster between 1990 and 2008 in California compared to the rest of the US during the same period, leading to a divergence in prevalence over time between California and the U.S. All of the above information is strongly suggestive of the continued success of the program.

Data from the 2008 CTS, along with data from the CTS surveys of previous years, showed a steady decline in the cigarette smoking prevalence among California adults which reached an historic low of 11.6 percent in 2008. All demographic groups within the California population enjoyed the decline. Adult smoking prevalence has consistently declined across all regions of California since 1990.

Other tobacco product use is not decreasing in a manner similar to cigarette smoking. While adult current cigarette smoking has decreased by 13.4 percent since 2005, current cigar smoking has increased by 7.9 percent. Hookah use is increasing faster than any other tobacco product, especially in young adults.

California smokers continued to make quit attempts: the overall percentage of smokers in the last year who made a quit attempt increased from 56.0 ± 3.5 percent in 2005 to 60.2 ± 2.8 percent in 2008. Over time, consumption patterns have shifted from daily smoking to non-daily smoking. There has also been a shift among daily smokers from moderate (11-20 cigarettes per day) and heavy (>20 cigarettes per day) daily smoking to light daily smoking (1-10 cigarettes per day). Most smokers who tried to quit had implemented a smoke-free home.

There appears to have been no substantial changes in the behavior related to cigarette purchasing or the prices consumers pay for cigarettes in recent years. The price of cigarettes in California, as measured by inflation-adjusted price, has been on the decline. This is counterproductive in terms of tobacco control purposes as price has been well documented to be inversely related to prevalence and consumption. Furthermore, based on the responses of survey participants, a large majority support an increase in the cigarette excise tax.

Nonsmokers are still increasingly protected from SHS exposure, especially in the workplace and in households. However, over 13 percent of workers report being exposed to SHS in the last two weeks. Most second-hand smoke exposure outside of the work and home environments occurred in parks and public outdoor places.

Based on the most recent CTS and analysis of trend data, we would conclude that the CTCP made great progress in the last two decades. Californians have less risk of being smokers and are less exposed to SHS.

However, challenges lie ahead in the context of sharply increased marketing expenditures from tobacco industry and stagnated tobacco control funding and declining inflation adjusted cigarette price.

# Further Reading

More information regarding the CTS can be found in the technical report:

The Technical Report for Two Decades of the California Tobacco Control Program: California Tobacco Survey, 1990-2008.

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# Appendix

## Charts and tables

**Table 1. Standardized Adult Smoking Prevalence (Screener Data)**

| | 1990 percent | 1993 percent | 1996 percent | 1999 percent | 2002 percent | 2005 percent | 2008 percent |
|---|---|---|---|---|---|---|---|
| **Overall** | 18.6 (±0.4) | 16.6 (±0.5) | 15.8 (±0.4) | 16.1 (±0.3) | 14.6 (±0.3) | 13.3 (±0.5) | 11.6 (±0.4) |
| **Gender** | | | | | | | |
| Male | 22.4 (±0.6) | 20.2 (±0.8) | 19.1 (±0.5) | 19.8 (±0.5) | 18.3 (±0.5) | 16.4 (±0.8) | 14.9 (±0.6) |
| Female | 15.0 (±0.7) | 13.1 (±0.6) | 12.6 (±0.4) | 12.7 (±0.3) | 11.0 (±0.4) | 10.2 (±0.5) | 8.4 (±0.4) |
| **Age** | | | | | | | |
| 18-24 | 16.4 (±1.4) | 14.7 (±1.1) | 16.5 (±0.9) | 18.9 (±0.8) | 16.4 (±0.9) | 13.5 (±1.5) | 10.7 (±1.0) |
| 25-44 | 20.3 (±0.7) | 18.1 (±0.9) | 17.3 (±0.6) | 17.8 (±0.4) | 16.1 (±0.4) | 15.3 (±1.0) | 13.0 (±0.8) |
| 45-64 | 21.4 (±1.1) | 18.7 (±0.9) | 16.9 (±0.6) | 16.8 (±0.5) | 15.8 (±0.6) | 13.9 (±0.9) | 12.8 (±0.7) |
| 65+ | 11.3 (±0.9) | 10.6 (±1.0) | 9.6 (±0.8) | 8.8 (±0.6) | 7.4 (±0.5) | 7.3 (±0.7) | 6.8 (±0.5) |
| **Race/Ethnicity** | | | | | | | |
| African American | 24.1 (±2.4) | 20.2 (±2.2) | 20.8 (±1.5) | 19.3 (±1.1) | 18.3 (±1.6) | 19.2 (±2.6) | 14.2 (±1.6) |
| Asian/PI | 13.9 (±1.1) | 11.2 (±1.3) | 11.9 (±0.9) | 12.7 (±0.9) | 11.7 (±0.9) | 10.8 (±1.9) | 8.1 (±1.1) |
| Hispanic | 17.2 (±1.0) | 14.8 (±1.0) | 13.8 (±0.8) | 14.3 (±0.5) | 12.7 (±0.6) | 11.5 (±1.0) | 10.2 (±0.7) |
| Non-Hispanic White | 19.6 (±0.4) | 18.5 (±0.6) | 17.3 (±0.3) | 17.7 (±0.4) | 16.0 (±0.4) | 14.2 (±0.6) | 12.7 (±0.5) |
| Other | 32.5 (±5.2) | 26.6 (±4.0) | 24.7 (±2.1) | 26.4 (±3.2) | 22.7 (±2.2) | 16.5 (±2.7) | 22.8 (±3.6) |
| **Education** | | | | | | | |
| Less than 12 years | 22.1 (±1.6) | 18.0 (±1.4) | 18.8 (±1.3) | 18.7 (±0.7) | 16.7 (±0.9) | 16.2 (±1.5) | 15.0 (±1.2) |
| High school graduate | 22.6 (±0.9) | 21.2 (±1.0) | 19.3 (±0.6) | 19.7 (±0.6) | 18.8 (±0.7) | 17.1 (±0.9) | 15.5 (±0.9) |
| Some college | 17.9 (±0.7) | 16.9 (±0.9) | 15.9 (±0.5) | 17.3 (±0.5) | 15.2 (±0.6) | 14.0 (±0.8) | 12.7 (±0.8) |
| College graduate | 12.2 (±0.7) | 10.8 (±0.8) | 9.8 (±0.5) | 9.7 (±0.4) | 9.0 (±0.4) | 7.3 (±0.7) | 5.9 (±0.4) |
| **Income** | | | | | | | |
| < $20,000 | 22.7 (±1.2) | | 21.4 (±0.9) | 22.4 (±0.9) | 20.9 (±1.4) | 19.1 (±1.8) | 19.8 (±2.0) |
| $20,001-$30,000 | 21.7 (±1.7) | | 19.1 (±0.8) | 19.4 (±0.9) | 18.7 (±1.3) | 17.6 (±2.4) | 16.7 (±2.0) |
| $30,001-$50,000 | 18.9 (±1.6) | | 16.4 (±0.8) | 18.1 (±0.8) | 17.2 (±0.9) | 17.7 (±1.7) | 15.4 (±1.4) |
| $50,001-$75,000 | 18.4 (±1.5) | | 14.9 (±1.1) | 16.3 (±0.8) | 14.8 (±0.9) | 14.0 (±1.3) | 12.5 (±1.5) |
| $75,001-$100,000* | 16.3 (±2.4) | | 12.8 (±1.3) | 14.4 (±1.0) | 12.4 (±0.7) | 11.2 (±1.3) | 10.3 (±1.2) |
| $100,001-$150,00 | | | | | | | 9.9 (±1.7) |
| > $150,000 | | | | | | | 7.8 (±1.5) |
| Missing | 16.8 (±1.4) | 16.6 (±0.5) | 13.3 (±0.8) | 12.7 (±0.7) | 12.2 (±0.8) | 11.5 (±1.5) | 9.9 (±1.1) |

*$75,000 and over prior to 2008